

CONTENTS

Preface	v
The role of acoustic properties in designs of acoustic and optical fibers	1
C. K. Jen (Boucherville, Quebec, Canada)	
Scanning acoustic microprobe analysis for testing solid state materials	9
H. Vettters, E. Mattheai, A. Schulz and P. Mayr (Bremen, F.R.G.)	
Observation of stable crack growth in Al_2O_3 ceramics using a scanning acoustic microscope	15
A. Quinten and W. Arnold (Saarbrücken, F.R.G.)	
Acoustic lenses employing PZT thin film transducers	21
C. K. Jen, C. Neron (Boucherville, Quebec, Canada), G. Yi, M. Sayer (Kingston, Ontario, Canada), M. Castonguay and J. D. N. Cheeke (Sherbrooke, Quebec, Canada)	
Mechanical characterization by acoustic techniques of SiC chemical-vapour-deposited thin films	27
J. M. Saurel, K. Alami, C. Amaudric du Chauffaut (Montpellier, France), O. Dugne and A. Guette (Pessac, France)	
Study of attenuation and dispersion of optically excited surface acoustic waves employing small poly(vinylidene difluoride) foil transducers	33
A. Neubrand and P. Hess (Heidelberg, F.R.G.)	
Efficient generation of acoustic pressure waves by short laser pulses	37
S. Fassbender, B. Hoffmann and W. Arnold (Saarbrücken, F.R.G.)	
Phase-preserving imaging of high frequency surface acoustic wave fields	43
G. Sölkner, A. Ginter and H.-P. Graßl (Munich, F.R.G.)	
Scanning electron acoustic microscopy of SiC particles in metal matrix composites	47
J. H. Cantrell and M. Qian (Cambridge, U.K.)	
Use of scanning electron acoustic microscopy for the analysis of III-V compound devices	53
J. F. Bresse (Bagnoux, France)	
Signal generation in scanning electron acoustic microscopy	57
M. Qian and J. H. Cantrell (Cambridge, U.K.)	
Waves and vibrations in periodic piezoelectric composite materials	65
B. A. Auld (Stanford, CA, U.S.A.)	
Propagation of elastic waves in one-dimensional composites	71
A. Alippi (Rome, Italy)	
Precision ultrasonic velocity measurements for the study of the low temperature acoustic properties in defective materials	77
A. Vanelstraete and C. Laermans (Leuven, Belgium)	
Bulk and surface waves for wood anisotropy characterization	83
V. Bucur (Seichamps, France)	
Photoacoustic characterization of liquid crystal phase transitions	87
C. Glorieux, E. Schoubs and J. Thoen (Leuven, Belgium)	
Analysis of plasma surface modifications by thermal depth profiling and correlation with plasma-surface interactions	93
B. K. Bein, M. Wojczak and J. Pelzl (Bochum, F.R.G.)	
Thermally induced concentration wave imaging	101
P. Korpiun, R. Osiander, B. Helm and R. Tilgner (Garching, F.R.G.)	
Application of the photoacoustic technique between room temperature and 1000 K for thermophysical measurements of porous graphite samples	107
B. K. Bein, H. W. Schmidt, D. Krüger, J. Gibkes and J. Pelzl (Bochum, F.R.G.)	

Pyroelectric thermal wave detector and its application	113
L. Kocsányi, P. Richter, P. Deak (Budapest, Hungary) and H. K. Lichtenhaler (Karlsruhe, F.R.G.)	
Interferometric measurement of thermal expansion	117
V. Kurzmann, J. Stöhr, M. Tochtrup and R. Kassing (Kassel, F.R.G.)	
Heterodyne common path interferometers for surface profilometry and characterization.	121
M. G. Somekh, M. J. Offside, R. K. Appel and C. W. See (London, U.K.).	
Quantitative analyses of power loss mechanisms in semiconductor devices by thermal wave calorimetry .	127
B. Büchner (Rehovot, Israel), M. Wolf (Philadelphia, PA, U.S.A.) and D. Cahen (Rehovot, Israel)	
Application of ultrasonic microscopy to non-destructive evaluation.	133
S. Joseph (Lille, France)	

CONTENTS

The lattice dynamical mean field criterion for low energy dislocation structure formation in shape memory alloys	137
S. Mendelson (New York, NY, U.S.A.)	
Strain hardening and substructural evolution in Ni-Co solid solutions at large strains	153
D. A. Hughes (Livermore, CA, U.S.A.) and W. D. Nix (Stanford, CA, U.S.A.)	
Influence of some parameters on the strength and fracture toughness of reaction-bonded silicon nitride composites	173
A. K. Mukhopadhyay and D. Chakraborty (Calcutta, India)	
A simple development of the shear lag theory appropriate for composites with a relatively small modulus mismatch	183
T. W. Clyne (Cambridge, U.K.)	
Process control of superplastic forming under superimposed hydrostatic pressure	193
H. S. Yang, H. K. Ahmed and W. T. Roberts (Birmingham, U.K.)	
Approximate calculation of fracture ductility and fracture toughness of ductile metals	205
W. H. Tai (Beijing, China)	
The relationship between the strain-hardening exponent n and the microstructure of metals	211
F. Zhang, M. Huang and D. Shi (Xi'an, China)	
Lithium effects in high temperature deformation of an Al-Li alloy: application to superplasticity	215
J. J. Blandin (Saint Martin d'Hères, France)	
The Poisson effect in cork	227
M. A. Fortes (Lisbon, Portugal) and M. T. Nogueira (Monte da Caparica, Portugal)	
Creep substructure formation in sodium chloride single crystals in the power law and exponential creep regimes	233
S. V. Raj (Cleveland, OH, U.S.A.) and G. M. Pharr (Houston, TX, U.S.A.)	
Positron annihilation study of radiation damage in neutron-irradiated zirconium and its alloys	243
M. Šob (Brno, Czechoslovakia), J. Kočík (Prague, Czechoslovakia), J. Pavlovský and M. Pahutová (Brno, Czechoslovakia)	
Application of scanning tunneling microscopy for crystallization studies of metallic glasses	251
A. Zaluska, L. Zaluski and A. Witek (Warsaw, Poland)	
Microstructure and crystallography of a directionally solidified Ni-NiMo eutectic alloy	257
D. Schwam and S. F. Dirnfeld (Haifa, Israel)	
ANNOUNCEMENT	265
CONFERENCE CALENDAR	267
ERRATUM	273
LETTERS	
Temperature rise at a dislocation pile-up breakthrough	L1
R. W. Armstrong (College Park, MD, U.S.A.) and W. L. Elban (Baltimore, MD, U.S.A.)	
Enhanced tensile ductility in Fe-Mn-Ni base maraging alloys	L5
S. N. Basu (Howrah, India) and A. N. Kumar (New Delhi, India)	
Interaction between creep and fatigue in a Cr-Mo-W-V steel	L9
X. Wang, H. Zhou, Q. H. Ni, Q. P. Kong (Hefei, China) and N. B. Zhou (Nanjing, China)	
AUTHOR INDEX	275
SUBJECT INDEX	277

